

CLAIMS

What is claimed is:

- 1 1. A method comprising:
2 reading one or more track offsets from a compact disk ("CD"); and
3 performing a database lookup using said offsets to identify information
4 associated with said CD in said database ("CD-related information").

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1 2. The method as in claim 1 further comprising:
2 encoding said offsets into an identification code; and
3 performing said database lookup using said identification code.

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1 3. The method as in claim 2 wherein encoding comprises:
2 executing a hash algorithm to generate said identification code.

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1 4. The method as in claim 3 wherein said hash algorithm is an MD5 hash
2 algorithm.

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1 5. The method as in claim 4 wherein said MD5 hash is rendered in a
2 Base-64 format.

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1 6. The method as in claim 1 wherein said CD-related information
2 comprises CD titles and CD track titles.

1 7. The method as in claim 1 further comprising:
2 if two or more CDs have the same track offsets, employing one or more
3 supplemental identification techniques to distinguish said two or more CDs in
4 said database.

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1 8. The method as in claim 7 wherein one of said supplemental
2 identification techniques comprises:
3 performing an analysis of audio content stored on said CDs.

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1 9. The method as in claim 8 wherein performing said analysis comprises:
2 identifying an audio analysis frame within which said audio content will be
3 analyzed; and
4 transforming said audio content into a spectral representation of said
5 audio content, said spectral representation usable to distinguish said two or more
6 CDs having the same track offsets.

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1 10. The method as in claim 9 wherein transforming further comprises:
2 performing one or more fast-Fourier transforms on said audio content
3 within said audio analysis frame to obtain said spectral representation as a matrix
4 of frequency coefficients.

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1 11. The method as in claim 10 further comprising:
2 convolutionally encoding one or more columns of said matrix to generate
3 convolutional codes representing each of said columns.

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1 12. The method as in claim 11 further comprising:
2 encoding said convolutional codes to produce a single code representing
3 said matrix.

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1 13. The method as in claim 12 wherein encoding comprises:
2 performing a hash of said convolutional codes.

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1 14. The method as in claim 12 wherein encoding comprises:
2 convolutionally encoding said convolutional codes.

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1 15. A method for identifying media comprising:
2 identifying a multimedia analysis frame comprised of multimedia content
3 within said media;
4 transforming said multimedia content into a spectral representation of said
5 multimedia content; and
6 using said spectral representation to uniquely identify said media within a
7 database.

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1 16. The method as in claim 15 wherein identifying said multimedia
2 analysis frame comprises:
3 measuring average energy of multimedia content within one or more test
4 frames; and
5 identifying a test frame as said multimedia analysis frame if average
6 energy within said test frame is above a threshold value.

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1 17. The method as in claim 16 further comprising:
2 identifying a start point for said test frame based on energy of said
3 multimedia content at said start point.

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1 18. The method as in claim 15 wherein transforming comprises:
2 converting said multimedia content into a plurality of frequency
3 coefficients.

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1 19. The method as in claim 18 wherein converting comprises:
2 performing one or more fast-Fourier transforms on said multimedia
3 content within said multimedia analysis frame to obtain a matrix of frequency
4 coefficients.

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1 20. The method as in claim 19 further comprising:
2 convolutionally encoding one or more columns of said matrix to generate
3 convolutional codes representing each of said columns.

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1 21. The method as in claim 20 further comprising:
2 encoding said convolutional codes to produce a single code representing
3 said matrix.

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1 22. The method as in claim 20 wherein encoding comprises:
2 performing a hash of said convolutional codes.

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1 23. The method as in claim 15 wherein said multimedia content comprises
2 audio content.

1 24. The method as in claim 23 wherein said media is a compact disk.

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1 25. A method for identifying compact disks ("CDs") comprising:
2 generating a first identification code based on data stored on a first CD;
3 attempting to perform a database lookup in a CD database using said first
4 identification code; and
5 employing a second identification technique if said first identification code
6 is a duplicate of an identification code used to identify a second CD in said
7 database.

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1 26. The method as in claim 25 wherein said first identification code is
2 based on data stored in a table of contents ("TOC") of said first CD.

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1 27. The method as in claim 26 wherein said data are track offsets for said
2 CD.

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1 28. The method as in claim 25 wherein generating a first identification
2 code comprises:

3 performing a hash of said track offsets to generate an offset hash value.

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1 29. The method as in claim 28 wherein said hash comprises an MD5
2 hash.

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1 30. The method as in claim 29 wherein said offset hash value is rendered
2 in base-64 format.

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1 31. The method as in claim 25 wherein said second identification
2 technique comprises an analysis of a frame of audio content stored on said first
3 CD.

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1 32. The method as in claim 31 wherein said analysis comprises
2 transforming said frame of audio content into its spectral components.

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1 33. The method as in claim 32 wherein transforming comprises:
2 performing one or more fast-Fourier transforms on said frame of audio
3 content to produce a matrix of frequency coefficients.

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1 34. The method as in claim 33 further comprising:
2 transforming said matrix into a single value representing said matrix.

J P D E M E T A L